Chapter F7: Conclusions

As discussed in Chapter F3, EPA estimates that the cumulative impingement impact of the Brayton Point Station is 69,300 age 1 equivalents or 5,100 pounds of lost fishery yield per year. The cumulative entrainment impact amounts to 3.8 million age 1 equivalents or 70,400 pounds of lost fishery yield each year.

The results of EPA's evaluation of the dollar value of I&E losses at Brayton Point (as calculated using benefits transfer, in Chapter F4) indicate that baseline economic losses range from $6,500 to $11,600 per year for impingement and from $163,400 to $296,600 per year for entrainment (all in $2000).

EPA also developed an HRC analysis to examine the costs of restoring lost impinged and entrained organisms (Chapter F5). Using the HRC approach, the value of I&E losses at Brayton Point are approximately $873,000 per year for impingement, and over $27.7 million per year for entrainment (HRC annualized at 7 percent over 20 years, in keeping with estimates for compliance costs). These HRC estimates were merged with the benefits transfer results (from Chapter F4) to develop a comprehensive estimate of the potential benefits of reducing I&E (summarized in Chapter F6). Benefits were estimated for different levels of I&E reduction, ranging from 10 percent to 90 percent reductions in I&E. The resulting estimates of the potential economic benefits of reduced I&E ranged from $5,000 to $524,000 per year for a 60% reduction in impingement and from $161,000 to $19.4 million per year for a 70% reduction in entrainment (all in $2000).

For a variety of reasons, EPA believes that the estimates developed here underestimate the total economic benefits of reducing I&E at Brayton Point. EPA assumed that the effects of I&E on fish populations are constant over time (i.e., that fish kills do not have cumulatively greater impacts on diminished fish populations). EPA also did not analyze whether the number of fish affected by annual I&E would increase as populations increase in response to improved water quality, fishing restrictions to rebuild depleted stocks, or other improvements in environmental conditions. In the economic analyses, EPA also assumed that fishing is the only recreational activity affected.